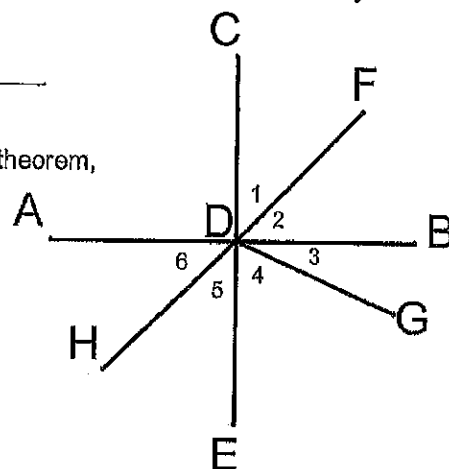


Name \_\_\_\_\_ Date \_\_\_\_\_

## 201 Chapter 2 Worksheet

Justify the following statements with a definition, postulate, property, theorem, etc...

1. SAP  $AD + DB = AB$
2. AAP  $m\angle 1 + m\angle 2 = m\angle CDB$
3. + If  $AD = BD$  and  $CD = DE$ ,  
then  $AD + CD = BD + DE$ .
4. Vert. Angs  $\angle 2 \cong \angle 6$
5. def of bis If  $\overline{DF}$  bisects  $\angle CDB$ , then  $m\angle 1 = m\angle 2$ .
6. def of midpt If  $D$  is the midpoint of  $AB$ , then  $AD = DB$ .
7. def of  $\perp$  line If  $CD \perp AB$ , then  $\angle CDB$  is a right angle.
8. def of rt  $\angle$  If  $\angle CDB$  is a right angle,  $m\angle CDB = 90$ .
9. def of Lin Pair Look at the picture,  $\angle ADF$  and  $\angle FDB$  are a linear pair.
10. Lin Pair Post. (LPP) If  $\angle ADF$  and  $\angle FDB$  are a linear pair, then  $\angle ADF$  and  $\angle FDB$  are supplementary.
11. def of compl. If  $m\angle 1 + m\angle 2 = 90$ , then  $\angle 1$  and  $\angle 2$  are complementary.
12. Comp. Thm If  $\angle 4$  and  $\angle 5$  are complementary and  $\angle 6$  and  $\angle 5$  are complementary, then  $\angle 4 \cong \angle 6$ .
13.  $\cong$  suppl. Thm If  $\angle 1$  and  $\angle 2$  are supplementary and  $\angle 2$  and  $\angle 3$  are supplementary, then  $\angle 1 \cong \angle 3$ .

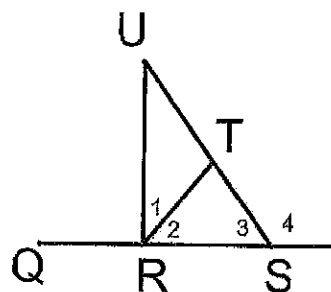


Complete with always, sometimes, or never.

14. Two points A lie in exactly one line.
15. Three points S lie in exactly one line.
16. Three points S lie in exactly one plane.
17. Three collinear points N lie in exactly one plane.
18. Two planes S intersect.
19. Two intersecting planes N intersect in exactly one point.
20. Two intersecting lines A intersect in exactly one point.
21. Two lines S intersect in exactly one point.
22. Two intersecting lines A lie in exactly one plane.

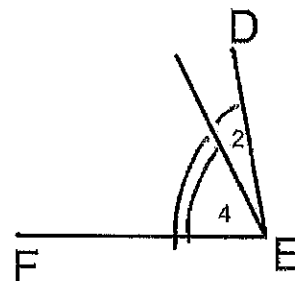
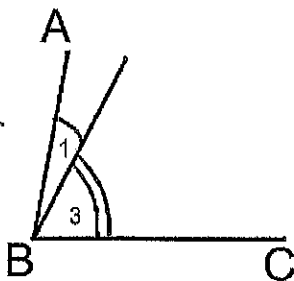
Write proofs for the following problems.

23. Given:  $\angle 2$  and  $\angle 4$  are supplementary  
Prove:  $\angle 2 \cong \angle 3$



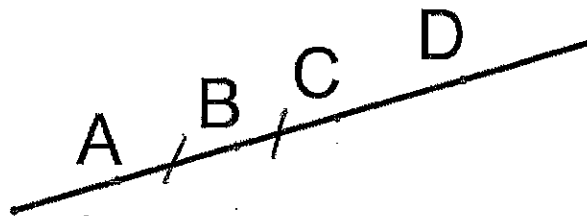
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| <p><u>S</u></p> <p>① _____</p> <p>② <math>\angle 3 + \angle 4</math> are Lin. Pair</p> <p>③ <math>\angle 3 + \angle 4</math> are suppl.</p> <p>④ <math>\angle 2 \cong \angle 3</math></p> | <p><u>R</u></p> <p>① Given</p> <p>② def of Linear Pair</p> <p>③ Lin Pair Post</p> <p>④ <math>\cong</math> Suppl. Thm</p> |
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24. Given:  $\angle 1 \cong \angle 2$ ;  $\angle 3 \cong \angle 4$   
Prove:  $\angle ABC \cong \angle DEF$



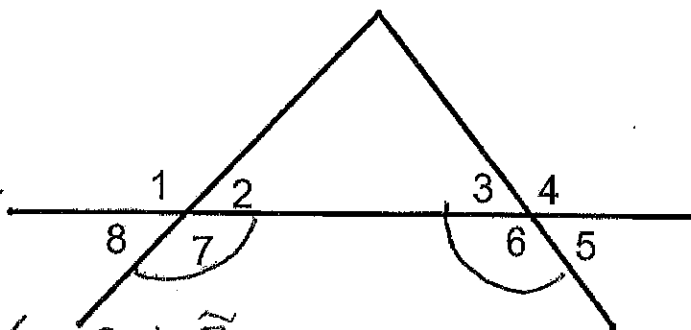
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| <p>S</p> <p>① ~~~~~</p> <p>② <math>m\angle 1 = m\angle 2</math>; <math>m\angle 3 = m\angle 4</math></p> <p>③ <math>m\angle 1 + m\angle 3 = m\angle 2 + m\angle 4</math></p> <p>④ <math>m\angle 1 + m\angle 3 = m\angle ABC</math><br/><math>m\angle 2 + m\angle 4 = m\angle DEF</math></p> <p>⑤ <math>m\angle ABC = m\angle DEF</math></p> <p>⑥ <math>\angle ABC \cong \angle DEF</math></p> | <p>R</p> <p>① Given</p> <p>② def of <math>\cong</math></p> <p>③ Add</p> <p>④ A.A.P.</p> <p>⑤ Subst</p> <p>⑥ def of <math>\cong</math></p> |
|--|---|

25. Given: B is the midpoint of  $\overline{AC}$   
Prove:  $AB + CD = BD$



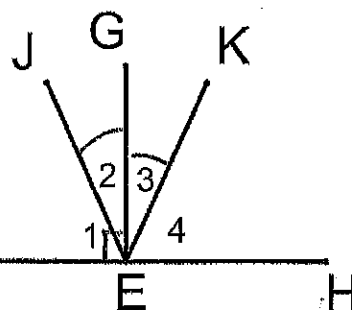
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| <p>S</p> <p>① ~~~~~</p> <p>② <math>BC = AB</math></p> <p>③ <math>BC + CD = BD</math></p> <p>④ <math>AB + CD = BD</math></p> | <p>R</p> <p>① Given</p> <p>② def of midpoint</p> <p>③ S.A.P.</p> <p>④ Subst.</p> |
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26. Given:  $\angle 7 \cong \angle 6$   
Prove:  $\angle 1 \cong \angle 4$



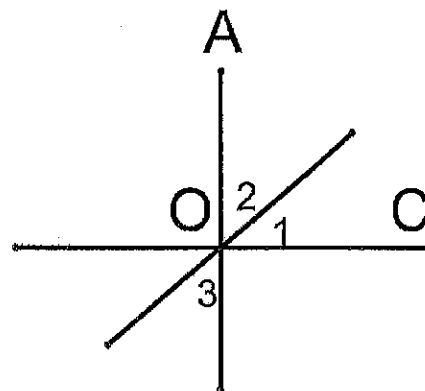
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| <p>S</p> <p>① ~~~~~</p> <p>② <math>\angle 7 \cong \angle 1</math><br/><math>\angle 6 \cong \angle 4</math></p> <p>③ <math>\angle 1 \cong \angle 4</math></p> | <p>R</p> <p>① Given</p> <p>② Vert. <math>\angle</math>s are <math>\cong</math></p> <p>③ Subst.</p> |
|--|--|

27. Given:  $\overline{EG} \perp \overline{FH}$ ;  $\overline{EG}$  bisects  $\angle JEK$   
 Prove:  $m\angle 1 = m\angle 4$



S.	R.
①	① Given
② $\angle FEG$ and $\angle HEG$ are rt $\angle$	② def of $\perp$ line
③ $\angle 1 + \angle 2$ are compl. $\angle 3 + \angle 4$ are compl.	③ Complement Thm.
④ $\angle 2 \cong \angle 3$	④ def of $\angle$ Bis
⑤ $\angle 1 \cong \angle 4$	⑤ $\cong$ compl. Thm
⑥ $m\angle 1 = m\angle 4$	⑥ def of $\cong$

28. Given:  $\angle 1$  and  $\angle 2$  are complementary  
 Prove:  $\overline{AO} \perp \overline{OC}$



S.	R.
①	① Given
② $m\angle 1 + m\angle 2 = 90$	② def of compl.
③ $m\angle 1 + m\angle 2 = m\angle AOC$	③ A.A.P
④ $m\angle AOC = 90$	④ Subst
⑤ $\angle AOC$ is a rt. $\angle$	⑤ def of Rt $\angle$
⑥ $\overline{AO} \perp \overline{OC}$	⑥ def of $\perp$ lines

This review does not contain any algebra style questions. To review those, you can look at p.128 #s 12-14, 28, 29; p.117 #s 17, 18; p.11 #s 39, 40; p.11 quiz #s 1-7 (These are not required.)